

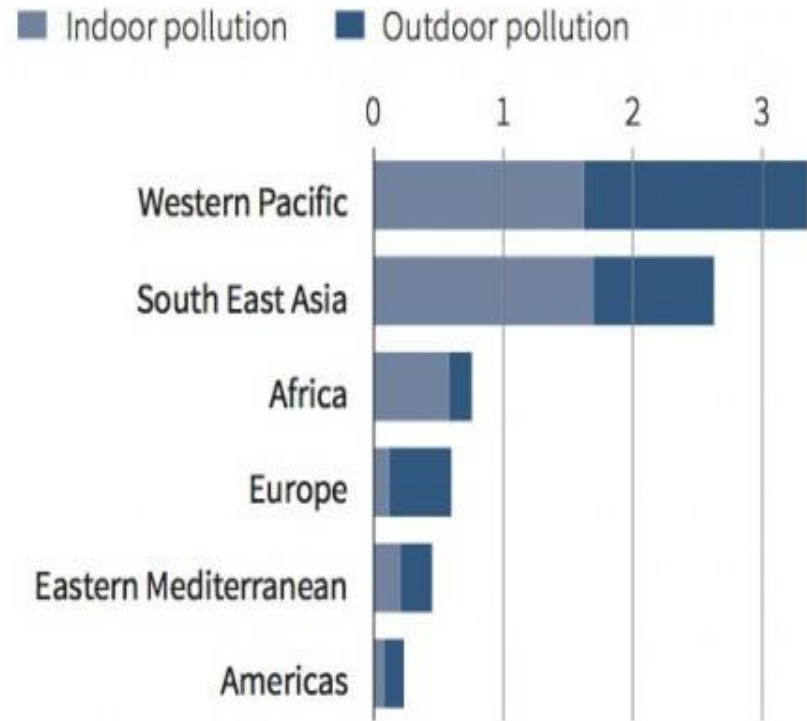
*Improving Air Quality in African Cities*  
*Jane Akumu, UNEP*



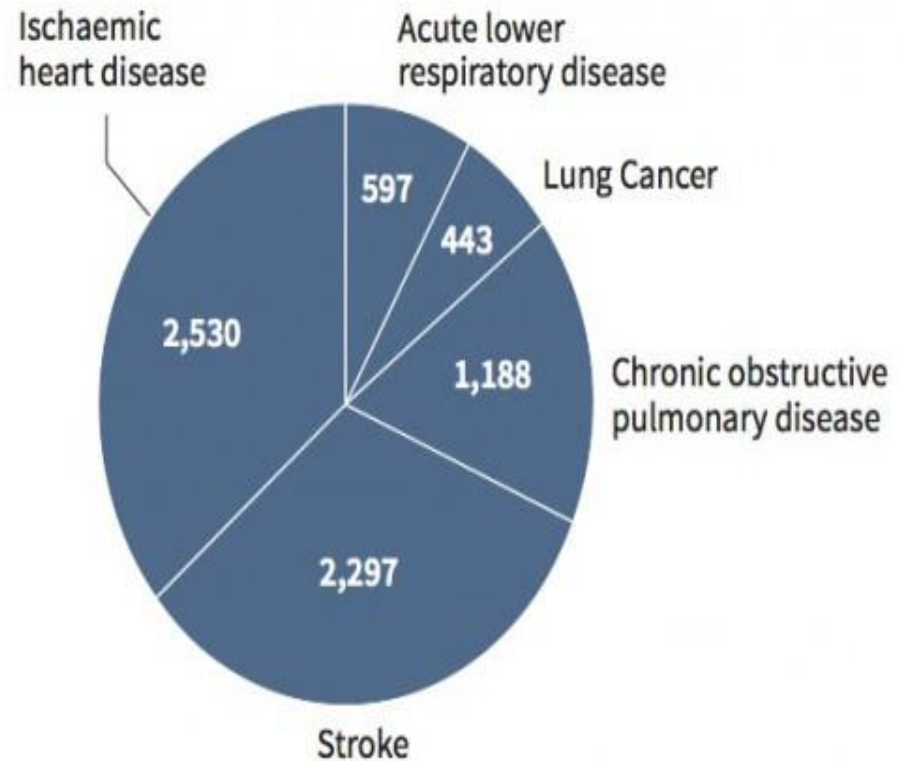
# Deadly air pollution

Air pollution killed around 7 million people worldwide in 2012 according to WHO's latest report.

### Air pollution-linked deaths by region in millions



### Air pollution-linked deaths by disease in thousands



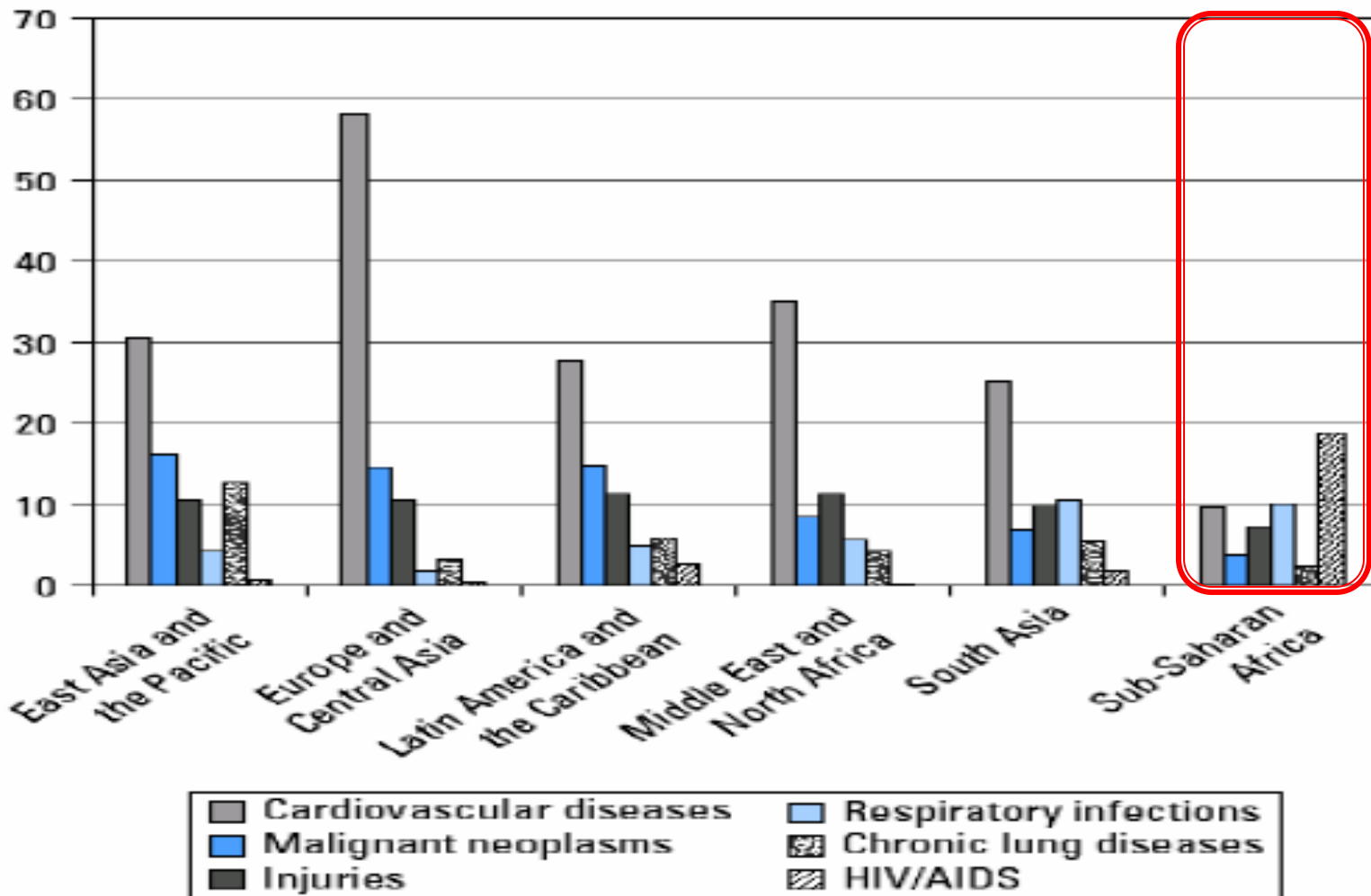
Indoor pollution is mostly caused by cooking over coal, wood and biomass stoves.

Outdoor pollution is mostly caused by transport, power generation, industrial and agricultural emissions, and residential heating and cooking.

Source: World Health Organization

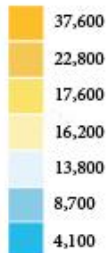
# Health Impacts of Air Pollution

Percentage of total deaths



Source: DCP2 2006, chapter 33, figure 33.1.

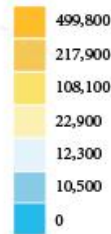
Total deaths from ARI by WHO region (2004)



Outdoor air pollution causes 121,000 ARI deaths annually.


- 2012 WHO estimates 176,000 deaths per year in Africa due to outdoor air pollution
- 600,000 deaths per year from household air pollution

Total deaths from childhood pneumonia by WHO region (2004)



Every year, 1.96 million people die from ARI as a result of indoor air pollution.

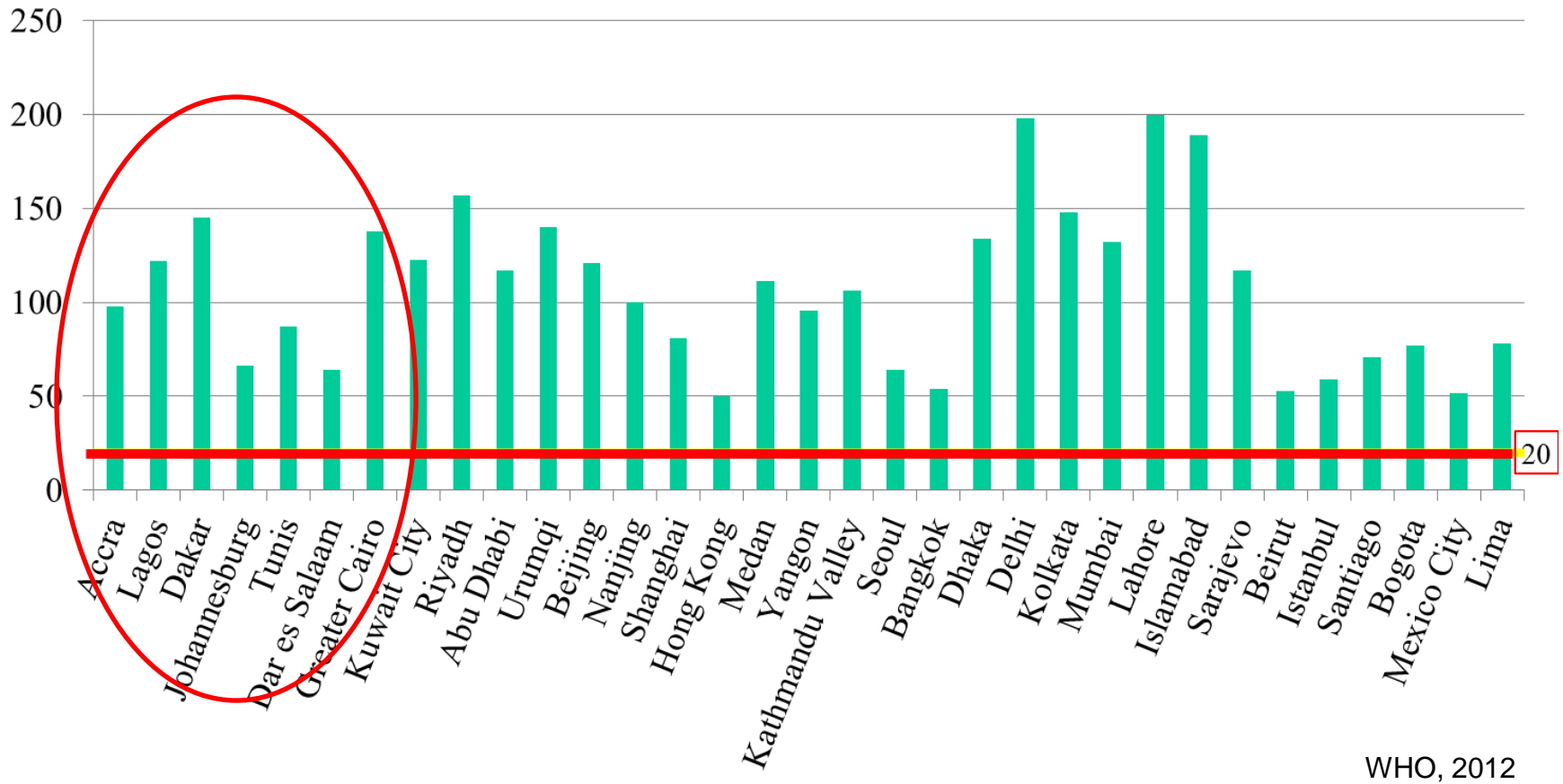
# Cost of Air Pollution in Africa

- 
- Cost of air pollution in African cities can be as high as **2.7% of GDP**
  - Recent University of Nairobi study: economic loss per year due to vehicle emissions is **115 billion shillings (1.3 million USD)**

# Main Sources of Air Pollution in Africa



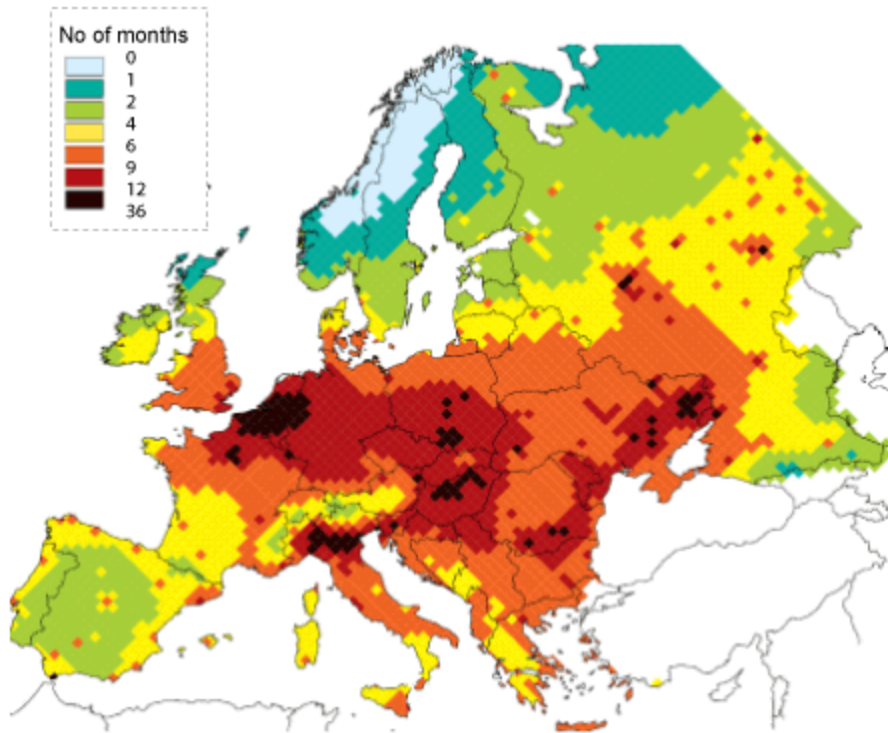
# Annual average PM levels of African cities are well above WHO Guideline



— = 20 $\mu\text{g}/\text{m}^3$  WHO PM10 Annual Air Quality Guideline

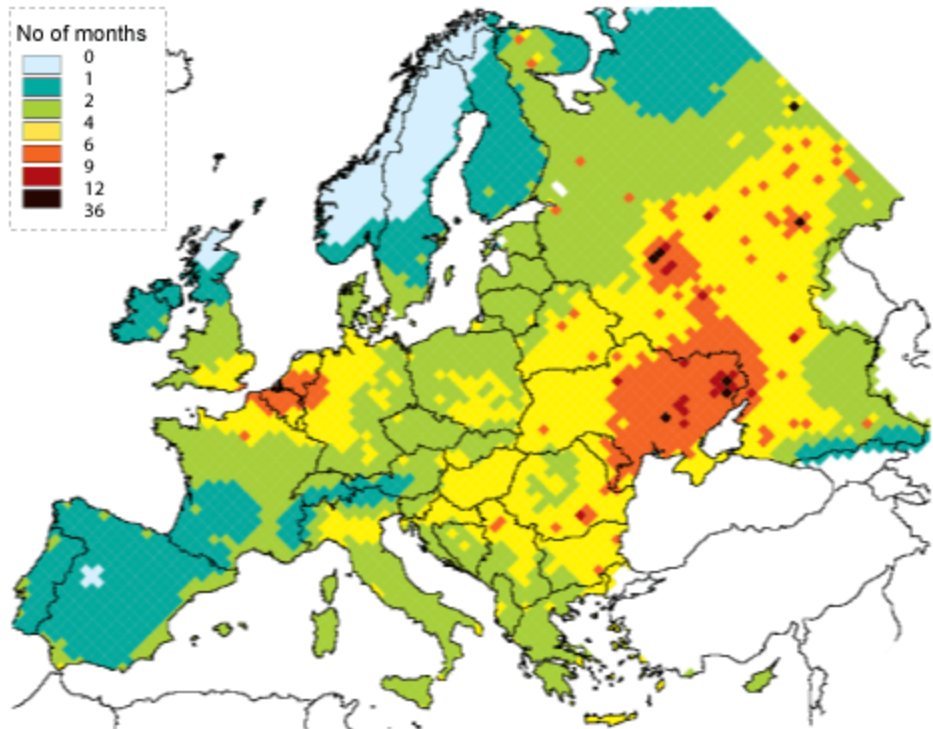
# Health Progress from PM reductions in Europe 2000 - 2020

→ Reduction in life expectancy due to exposure to PM 2,5  
Year 2000



SOURCE: Clean Air for Europe Programme / [www.environment.no](http://www.environment.no)

→ Reduction in life expectancy due to exposure to PM 2,5  
Year 2020



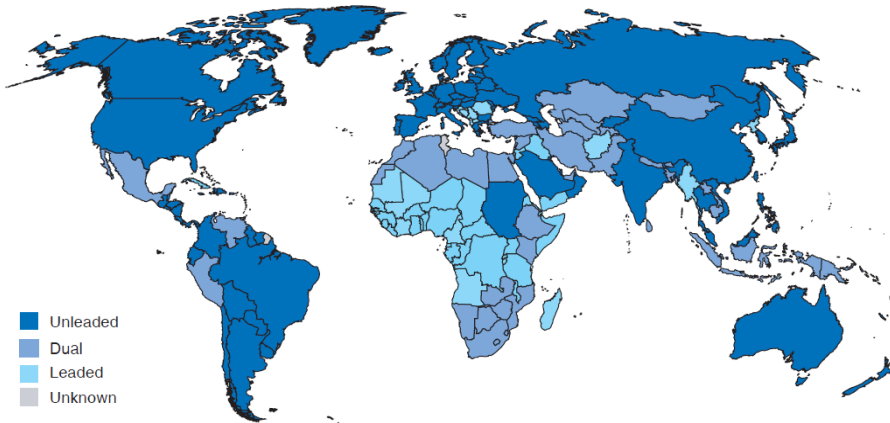
SOURCE: Clean Air for Europe Programme / [www.environment.no](http://www.environment.no)



# Progress towards cleaner fuels



Leaded Petrol Phase-Out: Global Status

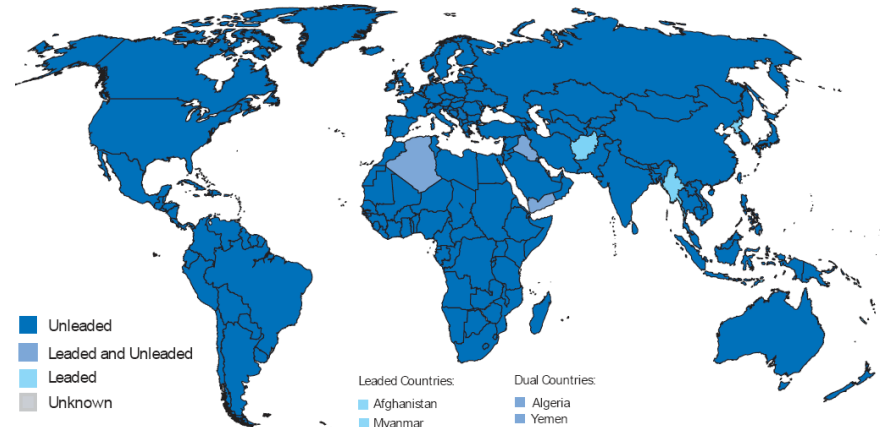


Status as of End 2002

2002



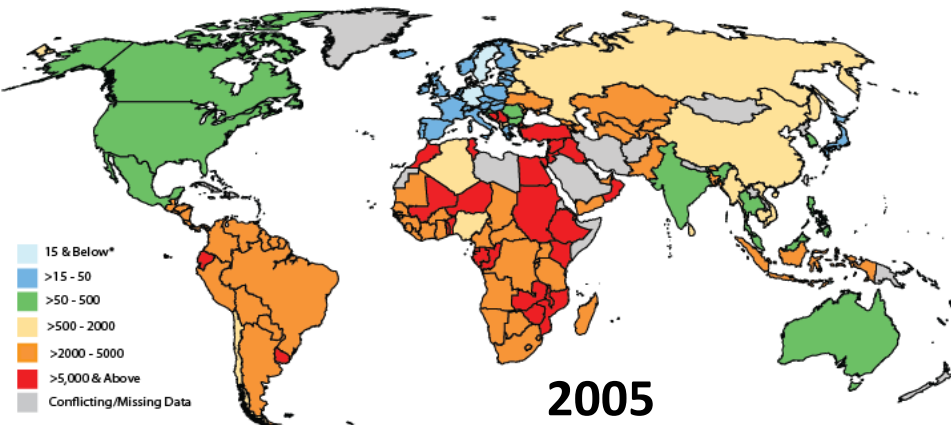
Leaded Petrol Phase-out: Global Status April 2014



2014



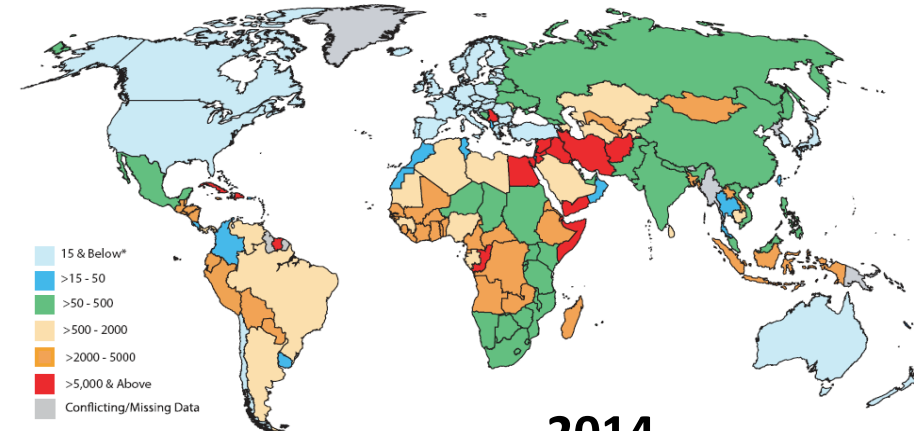
Diesel Fuel Sulphur Levels: Global Status 2005



2005



Diesel Fuel Sulphur Levels: Global Status April 2014



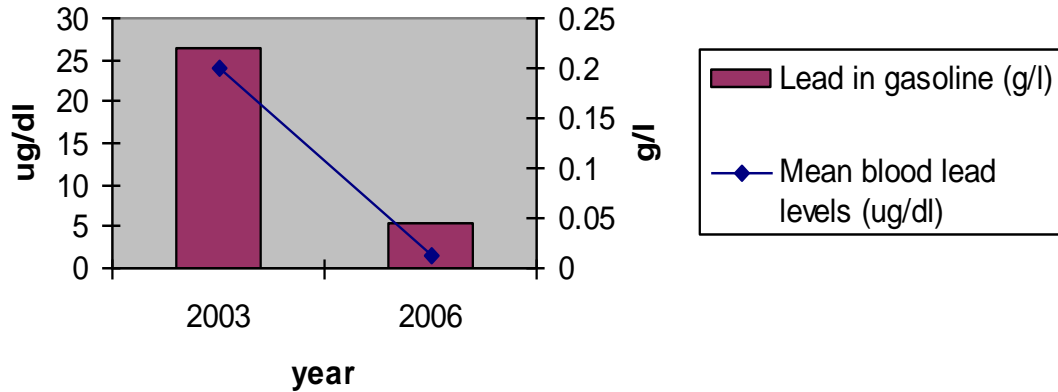
2014

\* Information in parts per million (ppm)

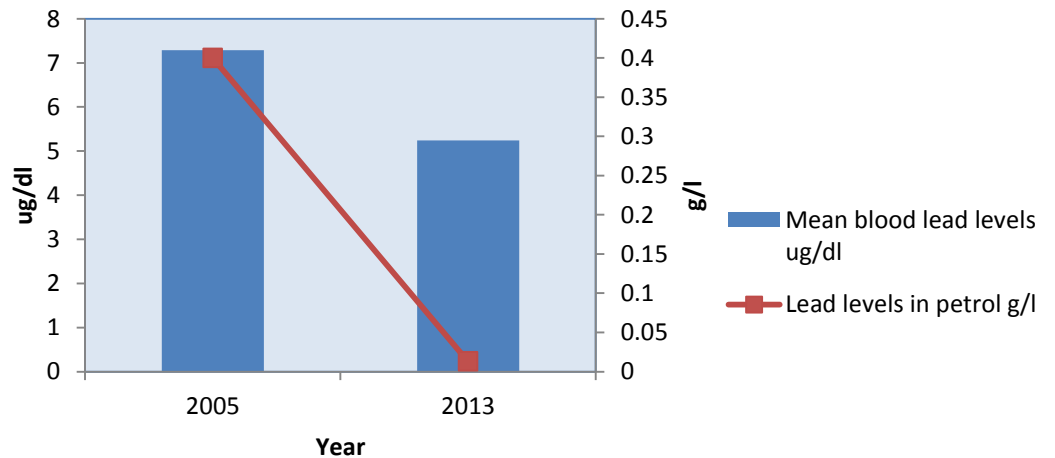
\* Information in parts per million (ppm)  
For additional details and comments per country, visit [www.unep.org/transport/pcf/v/](http://www.unep.org/transport/pcf/v/)

# Drop in blood lead levels

## Drop in blood lead level in Ghana after phasing out leaded gasoline in 2004

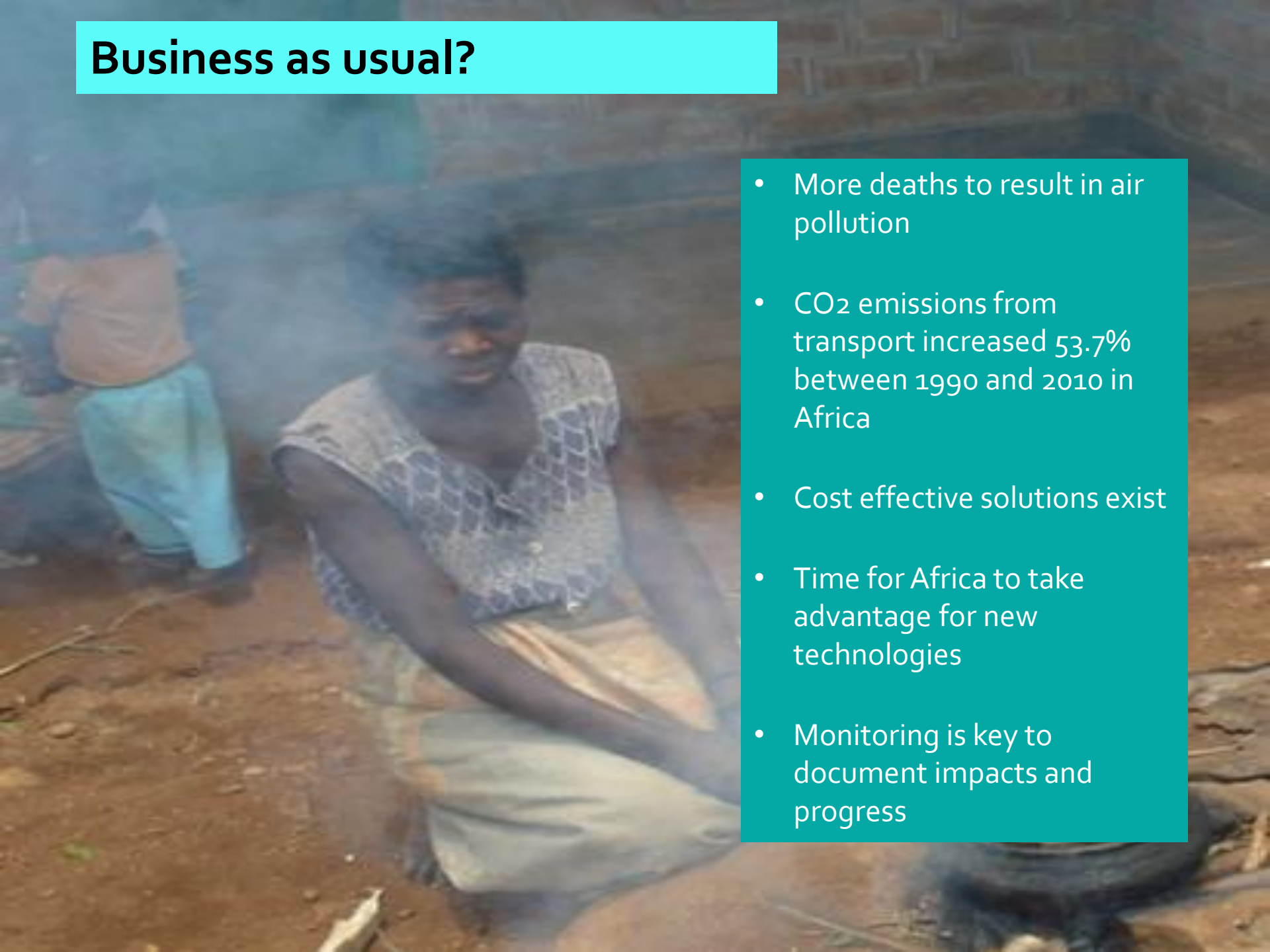


## Drop in blood lead levels in Kenya after phasing out leaded petrol in 2005



# Business as usual?

- More deaths to result in air pollution
- CO<sub>2</sub> emissions from transport increased 53.7% between 1990 and 2010 in Africa
- Cost effective solutions exist
- Time for Africa to take advantage for new technologies
- Monitoring is key to document impacts and progress



# Snapshot

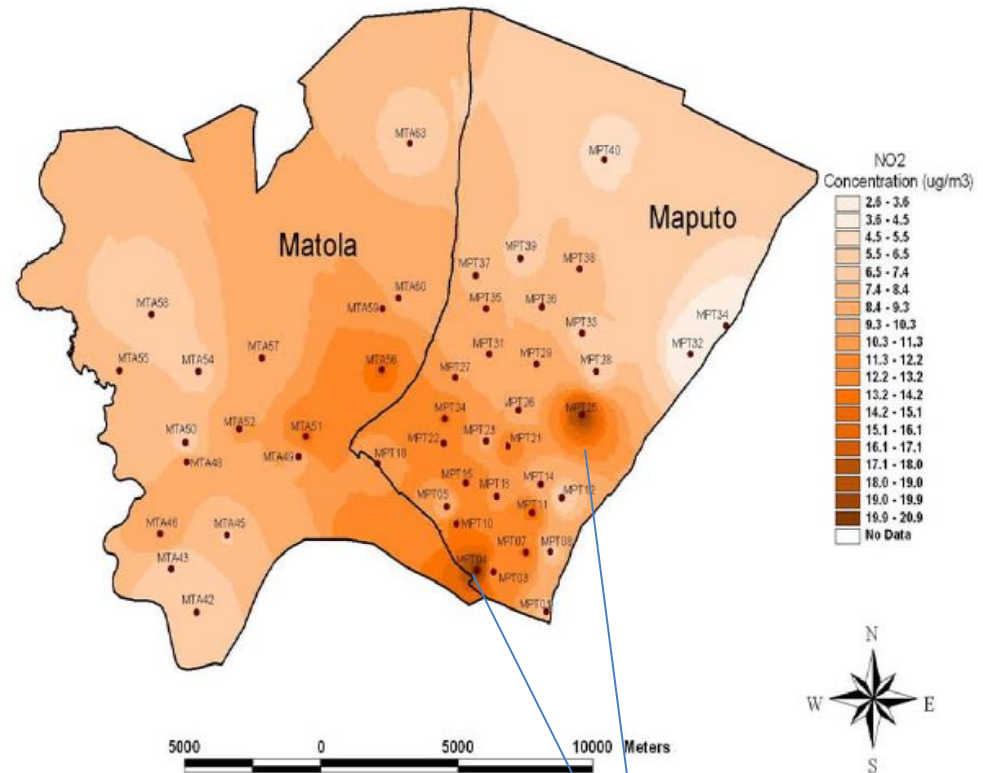
## Accra, Ghana

- Over 10 monitoring stations in residential, industrial, commercial and road side locations
- Roadside and commercial sites recorded highest pollution levels + the Dry harmattan winds
- Acute respiratory illness (ARI) in 2nd and 3rd places among the top 10 causes of out patient hospital visit

## Dar-es Salaam, Tanzania

- Cement industry, vehicles emissions main sources of this pollution

Maputo, Nairobi transport emissions are a major source of air pollution



Transport terminals

**Less polluted cities are liveable cities**





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